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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,497	02/10/2004	Blaine R. Bateman	38105.830026.US0	3233
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HOLLAND & HART, LLP P.O BOX 8749 DENVER, CO 80201			EXAMINER KARACSONY, ROBERT	
			ART UNIT	PAPER NUMBER
			2821	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/776,497	<b>Applicant(s)</b> BATEMAN, BLAINE R.	
	<b>Examiner</b> Robert Karacsony	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 2-12 are objected to because of the following informalities: Applicant claims: “wireless gateway” in the preamble. In line 1 in each of claims 2-12, “wireless gateway” should be changed to “enhanced wireless access point”.

1. Claim 13 is objected to because of the following informalities: Applicant claims: “means for providing an omni directional radio frequency pattern”. Based off of what is disclosed in the specification, examiner interprets the claim as: “wherein the access point comprises means for providing an omni directional radio frequency pattern”. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9, 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al. (US 6,507,322, hereinafter Fang) in view of Song et al. (US 2004/0169612, hereinafter Song).

Claim 1: Fang teaches an enhanced wireless access point, comprising:

an access point (1);

at least one omni directional antenna (10).

Fang fails to teach at least one ground plane radio frequency coupled to at least one of the at least one omni directional antenna, wherein the at least one omni directional antenna functions as a directional antenna. However, Song teaches using ground plane surfaces as reflectors

[0012] in order to increase the gain and directivity of an antenna [0034]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the reflectors of Song with the invention of Fang in order to have increased the gain and directivity of the antenna.

Claim 2: Fang teaches the at least one omni directional antenna comprises a dipole (fig. 1).

Claim 3: Fang teaches the at least one omni directional antenna comprises a plurality of omni directional antennas (10, 12).

Claim 4: Fang teaches the plurality of omni directional antennas are arranged to provided diversity (col. 3/lines 8-11).

Claim 5: Fang in view of Song teach all of the limitations of claim 2, as discussed above. Fang fails to teach the at least one ground plane comprises a plurality of ground planes. However, Song teaches the at least one ground plane comprises a plurality of ground planes [0012]. For the reasons discussed above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the reflectors of Song with the invention of Fang in order to have increased the gain and directivity of the antenna.

Claim 6: Fang in view of Song teach all of the limitations of claim 1, as discussed above. Fang teaches the at least one omni directional antenna comprises a first number ("2") of omni directional antennas (10, 12). Fang fails to teach the at least one ground plane comprises a second number of ground planes. However, Song teaches using ground planes to increase the gain and directivity (second number being "1"). For the reasons discussed above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have

combined the reflectors of Song with the invention of Fang in order to have increased the gain and directivity of the antenna.

If the modifications to the invention of Fang were made, as discussed above, one with ordinary skill in the art would realize the first number of omni directional antenna is larger than the second number of ground planes ( $2 > 1$ ).

Claim 7: Fang teaches the at least one omni directional antenna comprises two omni directional antennas (10, 12) arranged to provide diversity (col. 3/lines 8-11).

Claim 8: If the modifications to the invention of Fang were made, as discussed above for claim 7, one with ordinary skill in the art would realize the at least one ground plane comprises one ground plane associated with one of the two omni directional antennas (the radiation from the antennas are reflected by the ground plane).

Claim 9: Fang in view of Song teach all of the limitations of claim 7, as discussed above. Fang fails to teach the at least one ground plane comprises two ground planes, each ground plane associated with a respective one of the omni directional antennas. However, Song teaches the use of a plurality of ground planes [0012] in order to increase the gain and directivity. For the reasons discussed above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the reflectors of Song with the invention of Fang in order to have increased the gain and directivity of the antenna.

If the modifications to the invention of Fang were made, as discussed above, one with ordinary skill in the art would realize the at least one ground plane comprises two ground planes, each ground plane associated with a respective one of the omni directional antennas (the radiation from the two antennas are reflected by the two ground planes).

Claim 12: If the modifications to the invention of Fang were made, as discussed above, one with ordinary skill in the art would realize the at least one ground plane is placed to steer a radiation pattern associated with the at least one omni directional antenna (radiation from antennas are reflected by ground plane).

Claim 13: Fang teaches a wireless gateway, comprising:

an access point (1);

wherein the access point comprises means (10, 12) for providing an omni directional radio frequency pattern.

Fang fails to teach a means for converting the omni directional radio frequency pattern to a directional radio frequency pattern. However, Song teaches using ground plane surfaces as reflectors [0012] in order to increase the gain and directivity of an antenna [0034]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the reflectors of Song with the invention of Fang in order to have increased the gain and directivity of the antenna.

Claim 14: Fang teaches the means for providing is at least one omni directional antenna (10, 12).

Claim 15: Fang in view of Song teach all of the limitations of claim 13, as discussed above. Fang fails to teach the means for converting is at least one ground plane. However, Song teaches the means for converting is at least one ground plane [0012]. For the reasons discussed above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the reflectors of Song with the invention of Fang in order to have increased the gain and directivity of the antenna.

Claim 16: Fang in view of Song teach all of the limitations of claim 13, as discussed above. Fang fails to teach the means for converting is about  $1/4$  wavelength from the means for providing. However, Song teaches the means for converting is about  $1/4$  wavelength from the means for providing [0034]. For the reasons discussed above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the reflectors of Song with the invention of Fang in order to have increased the gain and directivity of the antenna.

4. Claims 10 and 11 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Fang in view of Song as applied to claim 1 above, and further in view of Zigler et al. (US 7,006,053, hereinafter Zigler).

Claim 10: Fang in view of Song teach all of the limitations of claim 1, as discussed above. They fail to teach at least one substrate;

The at least one ground plane is mounted on the substrate; and

The at least one substrate is releasably coupled to the access point.

However, Zigler teaches a support (907) on which is mounted a reflector (fig. 9), the support rotatably (releasably) attached to an access point (col. 5/lines 42-44). This structure allows the user to finely tune the antenna to meet new or unforeseen coverage issues (col. 4/lines 41-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the rotatable support of Zigler with the modified invention of Fang in view of Song in order to have finely tuned the antenna.

Claim 11: Fang in view of Song teach all of the limitations of claim 1, as discussed above. Fang also teaches the access point comprises a back plane (bottom surface of access point). They fail to teach the at least one ground plane is mounted on the back plane.

However, Zigler teaches a support (907) on which is mounted a reflector (fig. 9), the support rotatably (releasably) attached to an access point (col. 5/lines 42-44). This structure allows the user to finely tune the antenna to meet new or unforeseen coverage issues (col. 4/lines 41-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the rotatable support of Zigler with the modified invention of Fang in view of Song in order to have finely tuned the antenna.

If the modifications to the invention of Fang were made, as discussed above, one with ordinary skill in the art would realize the at least one ground plane is mounted on the back plane (access point is resting on base which is connected to the support arm, where the ground plane is attached).

5. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang in view of Song and Zigler.

Claim 17: Fang teaches a wireless gateway, comprising:

An access point (1);

The access point adapted to connect to a network (access points are adapted to connect to a networks);

The access further comprises:

A first omni directional antenna (10); and

A second omni directional antenna (12).



Fang fails to teach a bracket that comprises a first ground plane and is releasably coupled to the access point, such that when the bracket is releasably coupled to the access point, the first ground plane causes the first omni directional antenna to exhibit a first directional antenna radiation pattern. However, Song teaches using ground plane surfaces as reflectors [0012] in order to increase the gain and directivity of an antenna [0034]. Zigler teaches a support (907) on which is mounted a reflector (fig. 9), the support rotatably (releasably) attached to an access point (col. 5/lines 42-44). This structure allows the user to finely tune the antenna to meet new or unforeseen coverage issues (col. 4/lines 41-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Song and Zigler with the invention of Fang in order to have increased the gain and directivity as well as finely tuned the antenna.

If the modifications to the invention of Fang were made, as discussed above, one with ordinary skill in the art would realize that when the bracket is releasably coupled to the access point, the first ground plane causes the first omni directional antenna to exhibit a first directional antenna radiation pattern (the radiation from the antennas are reflected by the ground plane).

Claim 18: If the modifications to the invention of Fang were made, as discussed above, one with ordinary skill in the art would realize the first ground plane causes the second omni directional antenna to exhibit a directional antenna radiation pattern (the radiation from the second antenna is reflected by the first ground plane).

Claim 19: Fang in view of Song and Zigler teach all of the limitations of claim 17, as discussed above. Fang fails to teach fails to teach the bracket comprises a second ground plane and the second ground plane causes the second omni directional antenna to exhibit a section

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directional antenna radiation pattern.. However, Song teaches the use of a plurality of ground planes [0012]. For the reasons discussed above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Song and Zigler with the invention of Fang in order to have increased the gain and directivity as well as finely tuned the antenna.

If the modifications to the invention of Fang were made, as discussed above, one with ordinary skill in the art would realize the second ground plane causes the second omni directional antenna to exhibit a section directional antenna radiation pattern (the radiation from the second antenna is reflected by the second ground plane).

Claim 20: Fang in view of Song and Zigler teach all of the limitations of claim 17, as discussed above. Fang fails to teach when the bracket is releasably coupled to the access point, the first ground plane is about  $1/4$  wavelength from the first omni directional antenna. However, Song teaches the ground plane is about  $1/4$  wavelength from the antenna [0034]. For the reasons discussed above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Song and Zigler with the invention of Fang in order to have increased the gain and directivity as well as finely tuned the antenna.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Karacsony whose telephone number is 571-270-1268. The examiner can normally be reached on M-F 7:30-5 EST with alternating Friday's off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RKLL

*Douglas W. Owens* 4/16/07

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SUPERVISORY PATENT EXAMINER